

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☐ **BLACK BORDERS**
- ☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** \_\_\_\_\_

### **IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**

**AMENDMENTS TO THE CLAIMS**

Please amend claims 1 and 7 as follows.

1 1. (Currently Amended) A method for performing a database operation, comprising the  
2 computer-implemented steps of:  
3 receiving, at a database server, a database query that specifies an operation for  
4 manipulating data;  
5 in response to receiving said database query, the database server executing the database  
6 query by performing steps that include:  
7 retrieving data from a relational structure;  
8 storing the data in a non-relational structure that can be addressed as a multi-dimensional  
9 array; and  
10 performing said operation specified in the database query on said data.

1 2. (Original) The method of Claim 1, wherein the step of storing the data in a structure  
2 comprises the step of storing the data in a structure that can be symbolically addressed as  
3 an n-dimensional array.

1 3. (Original) The method of Claim 1, further comprising the step of presenting in tabular  
2 format results from performing said operation.

1 4. (Original) The method of Claim 1, wherein the step of performing said operation  
2 comprises the step of automatically reordering the specified operations to allow the  
3 operation to be correctly performed on said data stored in said non-relational structure.

1 5. (Original) The method of Claim 1, wherein the step of performing said operation  
2 comprises the step of aggregating over a set of data information contained in multiple  
3 cells of said non-relational structure.

1 6. (Original) The method of Claim 1, wherein the step of performing said operation  
2 comprises the step of repeatedly performing a series of manipulations on said data until a  
3 particular criterion is satisfied.

1 7. (Currently Amended) A method for processing database query operations, comprising the  
2 computer-implemented steps of:  
3 a database server receiving a database query that:  
4 references data in a relational structure as if the data was stored in a multi-  
5 dimensional array, and  
6 specifies an operation for manipulating data; and  
7 in response to receiving said database query the database server executing the database  
8 query by performing steps that include:  
9 retrieving the data from said relational structure; structure, and  
10 performing said operation specified in said database query.

1 8. (Previously Presented) The method of Claim 7, wherein:  
2 the step of receiving a database query comprises the step of receiving a database query  
3 that specifies a multi-dimensional array operation.

- 1 9. (Original) The method of Claim 7, wherein the step of retrieving the data comprises the  
2 step of retrieving the data from one or more relational database tables.
- 1 10. (Original) The method of Claim 7, further comprising the step of storing said data in a  
2 non-relational structure; and  
3 wherein the step of performing said operation comprises the step of performing said  
4 operation in reference to said data stored in said non-relational structure.
- 1 11. (Original) The method of Claim 7, wherein the step of performing said operation  
2 comprises the step of repeatedly performing a series of manipulations on said data until a  
3 particular criteria is satisfied.
- 1 12. (Previously Presented) A method for processing database query operations, comprising  
2 the computer-implemented steps of:  
3 a database server receiving a database query that specifies an operation for manipulating  
4 data; and  
5 in response to receiving the database query, the database server performing the steps of:  
6 retrieving a first set of data from a first relational structure;  
7 storing the first set of data in a non-relational structure; and  
8 manipulating the first set of data by performing the operation previously specified in the  
9 database query.

1 13. (Original) The method of Claim 12, wherein the step of retrieving a first set of data from  
2 a first relational structure comprises the step of retrieving said first set of data from a  
3 relational database.

1 14. (Original) The method of Claim 13, wherein the step of retrieving said first set of data  
2 from a relational database comprises the step of retrieving said first set of data from one  
3 or more tables within said a relational database.

1 15. (Original) The method of Claim 12, wherein the step of storing the first set of data in a  
2 non-relational structure comprises the step of storing the first set of data within a  
3 spreadsheet application.

1 16. (Original) The method of Claim 12, wherein the step of storing the first set of data in a  
2 non-relational structure comprises the step of storing the first set of data in a non-  
3 relational database application.  
4

1 17. (Original) The method of Claim 12, wherein the step of storing the first set of data in a  
2 non-relational structure comprises the step of storing the first set of data within an n-  
3 dimensional array data structure.

1 18. (Previously Presented) The method of Claim 12, wherein the step of manipulating the  
2 first set of data comprises the steps of symbolically addressing the first set of data as an  
3 n-dimensional array information.

1 19. (Original) The method of Claim 12, further comprising the step of, after performing the  
2 step of manipulating the first set of data, storing in a second relational structure, result  
3 information based on performance of said operation.  
4

1 20. (Original) The method of Claim 12, wherein the step of manipulating the first set of data  
2 comprises the step of repeatedly performing a series of manipulations on said first set of  
3 data until a particular criteria is satisfied.

1 21. – 40. (Canceled)

1 41. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 1.

1 42. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 2.

1 43. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 3.

1 44. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 4.

1 45. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 5.

1 46. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 6.

1 47. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 7.

1 48. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 8.

1 49. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 9.

1 50. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 10.

1 51. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 11.

1 52. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 12.

1 53. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 13.

1 54. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 14.

1 55. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 15.

1 56. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 16.



1 57. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 17.

1 58. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 18.

1 59. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 19.

1 60. (Previously Presented) A computer-readable medium carrying one or more sequences of  
2 instructions which, when executed by one or more processors, causes the one or more  
3 processors to perform the method recited in Claim 20.

1 61. (Previously Presented) The method of claim 1, wherein the multi-dimensional array  
2 has one or more dimensions that correspond to a column of the relational structure.  
1

1 62. (Previously Presented) A computer-readable medium carrying one or more sequences  
2 of instructions which, when executed by one or more processors, causes the one or  
3 more processors to perform the method recited in Claim 61.  
1